



VALLEY ROAD BRIDGE OVER THE PASSAIC RIVER LOCAL CONCEPT DEVELOPMENT STUDY

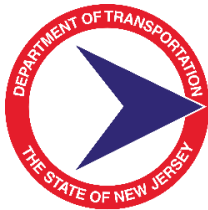
Bernards Township, Somerset County, and
Long Hill Township, Morris County, New Jersey

LONG HILL TOWNSHIP COMMITTEE

January 9, 2019



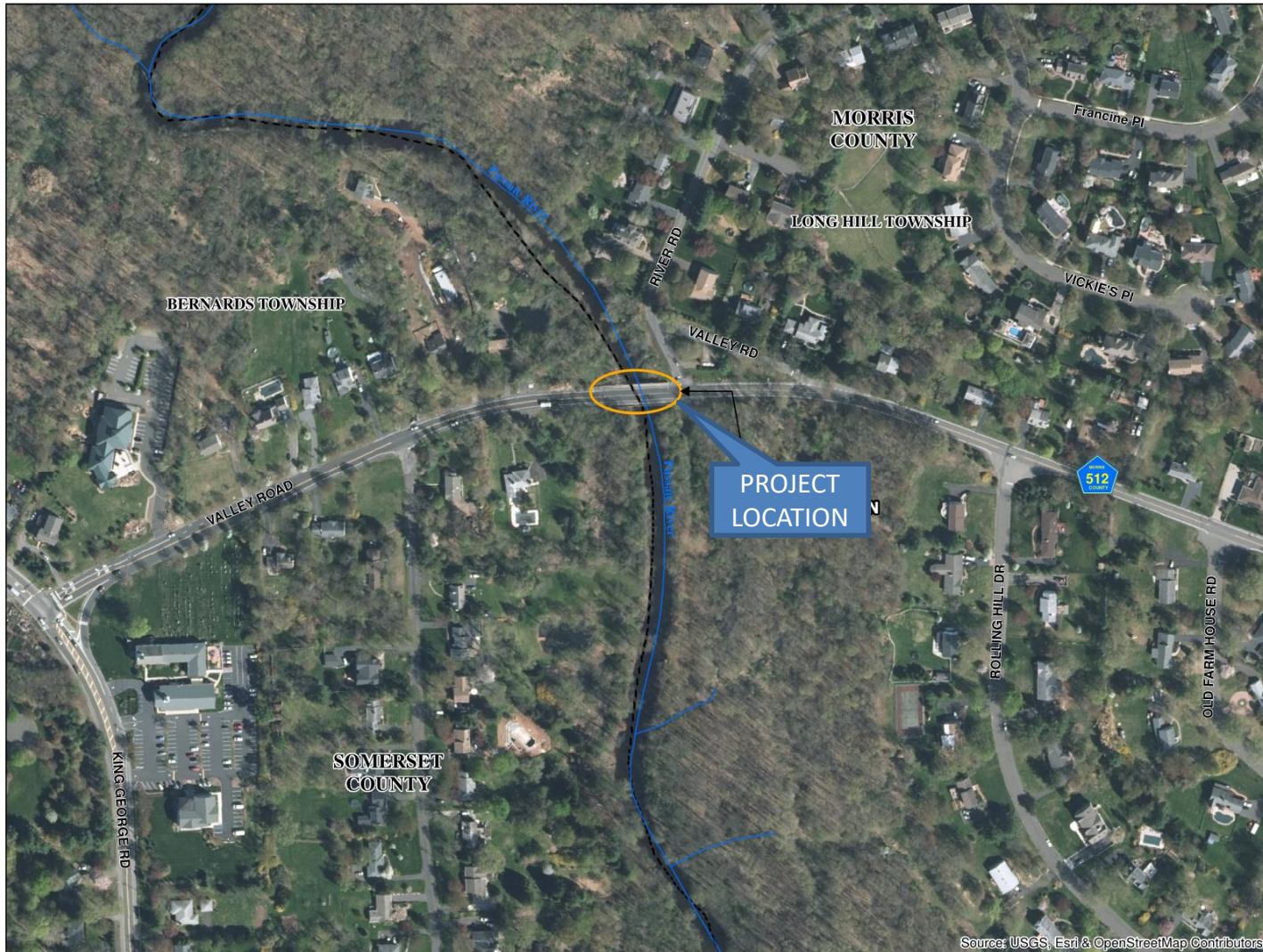
PROJECT TEAM



PROJECT OVERVIEW & BACKGROUND

- Valley Road (CR 512) Bridge over Passaic River is located in Bernards Township, Somerset County and Long Hill Township, Morris County
- Bridge was built in 1931
- Bridge is in need of rehabilitation or replacement
- NJTPA, Somerset County and Morris County - Local Concept Development Study was initiated in November 2017
- Local Capital Project Delivery Process provides the opportunity to advance this project with public input and agency collaboration

AERIAL MAP



Source: USGS, Esri & OpenStreetMap Contributors

Aerial Map

Valley Road Bridge over Passaic River

Bernards Twp, Somerset County
Long Hill Twp, Morris County
New Jersey



Legend

- Streams
- County Boundary
- Municipality Boundary



0 200 Feet



LOCAL CAPITAL PROJECT DELIVERY PROCESS

Local Concept Development	Local Preliminary Engineering	Final Design/Right of Way Acquisition	Construction
<ul style="list-style-type: none">• Data Collection• Initiate Public Outreach Efforts• Purpose and Need Statement• Alternatives Development and Analysis• Select Preliminary Preferred Alternative• NEPA Classification• Local Concept Development Report	<ul style="list-style-type: none">• Continue Public Outreach Efforts• Preliminary Design• Preliminary ROW Documents• Preliminary Engineering Plans• Preliminary Construction Cost Estimate and Schedule• Approved Design Exception Report• Approved NEPA Environmental Document• Local Preliminary Engineering Report	<ul style="list-style-type: none">• Continue Public Outreach Efforts• Final Design• Final ROW Documents and ROW Acquisition• Final Contract Plans and PS&E Package• Final Utility Relocation Schemes• Secure Environmental Permits• Environmental Reevaluation	<ul style="list-style-type: none">• Continue Public Outreach Efforts• Complete Construction• As-Built Plans• Close-Out Documentation

VALLEY ROAD BRIDGE DATA

- Year Built: 1931
- Bridge Type: Three-span concrete encased multi-stringer
- Overall Bridge Length = 103 feet
- Bridge Roadway Width = 33'-4"
- Posted Speed Limit = 40 MPH
- Posted Weight Limit = 16 Tons
- One lane in each direction
- Outside shoulders: 2' wide WB, 4' wide EB
- 5'-6" Sidewalks in each direction
- 2018 AADT = 9,329 vehicles per day

EXISTING BRIDGE CONDITION

- The bridge is in overall poor condition due to the condition of the substructure and low inventory ratings
- The substructure is in poor condition due to scaling and efflorescence throughout.
- The bridge is structurally deficient due to poor substructure condition and low inventory ratings (posted for 16 tons weight limit)
- Sufficiency Rating is 45.5 out of 100 (17th Cycle)

EXISTING BRIDGE PHOTOS



North fascia, looking southwest



South fascia, looking west

EXISTING BRIDGE CONDITION



South fascia @ east pier



Under bridge, looking at north pier

ENVIRONMENTAL CONSTRAINTS MAP



ENVIRONMENTAL CONSTRAINTS MAP

Valley Road Bridge over Passaic River

Bernards Twp, Somerset County
Long Hill Twp, Morris County
New Jersey



Legend

- Streams
- Municipality Boundary
- Highlands Planning Area
- Freshwater Wetlands
- Passaic River Park



SITE CONSTRAINTS



*NJ American Water Booster Station
located east of bridge*



*Wastewater Pump/Generator located
west of bridge*

SITE CONSTRAINTS



Passaic River Park entrance



Trail entrance in Passaic River Park

PURPOSE AND NEED

- The purpose of this project is to address the deficiencies of the Valley Road Bridge over the Passaic River and to provide an upgraded structure that meets current standards and maintains a safe means of transportation across the Passaic River for all users.

PURPOSE AND NEED

- The Valley Road Bridge is a Bi-County bridge connecting Somerset and Morris Counties. The bridge provides an important transportation link for residents and commuters connecting to major routes such as I-78 and I-287.
- The bridge is in overall poor condition due to the condition of the substructure and has been posted for 16 tons gross load since 1993. Due to low inventory ratings, the bridge is categorized as Structurally Deficient. The bridge has a Sufficiency Rating of 45.5 out of 100.

GOALS AND OBJECTIVES

- Upgrade the bridge structural capacity to meet AASHTO and NJDOT design standards
- Upgrade bridge and approach roadway conditions to meet AASHTO and NJDOT safety standards, including new parapets and guide rail
- Minimize environmental, social and economic impacts
- Minimize impacts to the Passaic River Park
- Minimize impacts to existing utilities including water and gas mains, aerial electric, as well as the water booster and pump stations
- Minimize disruptions to traffic operations during construction
- Maintain access to adjacent properties at all times during construction
- Minimize the use of detours; if detours are required, utilize the state and county roadway network to the greatest extent feasible
- Provide pedestrian and bicycle compatibility on the bridge and approach roadways
- Maintain the existing aesthetics of the bridge to the extent feasible

ALTERNATIVES EVALUATED

- Alternative 1 – New Bridge on Existing Alignment, Full Detour.
- Alternative 2 – New Bridge on Existing Alignment with Realigned River Road, Full Detour.
- Alternative 3 – New Bridge on North Alignment, with Realigned River Road, 2-staged construction.
- Alternative 4 – New Bridge on South Alignment, with Realigned River Road, 2-staged construction.
- Alternative 5 – New Bridge on North Alignment (narrower width), with Realigned River Road, 2-staged construction
- Alternative 6 – New Bridge on North Alignment, with Realigned River Road, 3-staged construction

ALTERNATIVES MATRIX

ALTERNATIVES COMPARISON MATRIX

Local Concept Development Study for Valley Road Bridge over the Passaic River
Bernards Township, Somerset County and Long Hill Township, Morris County, NJ

Project Overview				Alternative Options																									
Alternatives	No Build	Bridge Rehabilitation	Replace In-Kind	Concept 1 New Bridge on Existing Alignment, Full Detour				Concept 2 New Bridge on Existing Alignment with Realigned River Road, Full Detour				Concept 3 New Bridge on North Alignment with Realigned River Road, 2-Stage Construction				Concept 4 New Bridge on South Alignment with Realigned River Road, 2-Stage Construction				Concept 5 New Bridge on North Alignment (Narrower Width) with Realigned River Road, 2-Stage Construction				Concept 6 New Bridge on North Alignment with Realigned River Road, 3-Stage Construction					
				Alternative 1A - Single Span	Alternative 1B - 2-Span	Alternative 1C - 2-Span	Alternative 1D - 2-Span	Alternative 2A - Single Span	Alternative 2B - 2-Span	Alternative 2C - 2-Span	Alternative 2D - 2-Span	Alternative 3A - Single Span	Alternative 3B - 2-Span	Alternative 3C - 2-Span	Alternative 3D - 2-Span	Alternative 4A - Single Span	Alternative 4B - 2-Span	Alternative 4C - 2-Span	Alternative 4D - 2-Span	Alternative 5A - Single Span	Alternative 5B - 2-Span	Alternative 5C - 2-Span	Alternative 5D - 2-Span	Alternative 6A - Single Span	Alternative 6B - 2-Span	Alternative 6C - 2-Span	Alternative 6D - 2-Span		
	Superstructure Type	Concrete encased multi-stringer	Concrete encased multi-stringer	Steel Mulligirders	Steel Rolled Beam; W24x250	Steel Rolled Beam; W24x68	Prestressed Slab Beam; 36' x 21'	Prestressed Spread Box Beam; 48' x 27'	Steel Rolled Beam; W24x250	Steel Rolled Beam; W24x68	Prestressed Slab Beam; 36' x 21'	Prestressed Spread Box Beam; 48' x 27'	Steel Rolled Beam; W24x250	Steel Rolled Beam; W24x68	Prestressed Slab Beam; 36' x 21'	Prestressed Spread Box Beam; 48' x 27'	Steel Rolled Beam; W24x250	Steel Rolled Beam; W24x68	Prestressed Slab Beam; 36' x 21'	Prestressed Spread Box Beam; 48' x 27'	Steel Rolled Beam; W24x250	Steel Rolled Beam; W24x68	Prestressed Slab Beam; 36' x 21'	Prestressed Spread Box Beam; 48' x 27'	Steel Rolled Beam; W24x250	Steel Rolled Beam; W24x68	Prestressed Slab Beam; 36' x 21'	Prestressed Spread Box Beam; 48' x 27'	
Criteria																													
Meets Project Purpose and Need	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Maintenance and Protection of Traffic																													
Number of lanes provided during construction	2	1	1	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Is Detour Required/Length of detour	No	No	No	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	Yes, length varies from 2.6 to 13 miles	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No		
Roadway																													
Controlling Substandard Design Elements Remaining	9	4	3	3	3	3	3	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	3	3	3	3		
Improves Lane Widths	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No		
Improves Shoulder Widths	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Improves Sight Distance at River Road Intersection	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Profile Raise at the Bridge	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No		
Traffic Operations & Bicycle/Pedestrian																													
Accommodates design year traffic volumes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Bicycle/Pedestrian compatibility provided with connectivity to approach roadways	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Sidewalks provided	2	2	2	2	2	2	2	2	2	2	2	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction	2 final / 1 during construction			
Construction Duration																													
Duration (Months)	0	3	12	12	14	14	14	12	14	14	14	24	28	28	28	24	28	28	28	28	30	30	30	30	34	34	34		
Right of Way Impacts																													
Required ROW (Acres)	0	6	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Number of Temporary construction easements	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Number of partial property acquisitions	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1		
Number of entire property acquisitions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Access																													
# of Access Impacts to adjacent properties during construction	0	0	0	1	1	1	1	4	4	4	4	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
# of Permanent Access Impacts to adjacent properties	0	0	0	0	0	0	0	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3		
Structural Design																													
Accelerated Bridge Construction Methodology	N/A	N/A	N/A	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No		
Bridge opening meets design year storm (H&M)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Seismic Design addressed	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Bridge Approach Safety Upgraded	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
75 yr. Bridge Life Cycle	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Environmental Impacts																													
Passaic River County Park - Green Acres & Section 4(f)	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No		
Total Wetlands Impacts (acres)	No	Yes	Yes	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.27	0.27	0.27	0.27	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05		
Threatened and Endangered Species Habitat	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Floodplain (acres)	No	Yes	Yes	0.29	0.29	0.29	0.29	0.34	0.34	0.34	0.34	0.35	0.35	0.35	0.35	0.40	0.40	0.40	0.40	0.36	0.36	0.36	0.36	0.33	0.33	0.33	0.33		
Riparian Zone (acres)	No	Yes	Yes	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.10	0.10	0.10	0.13	0.13	0.13	0.13	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09			
Historic Resources (# of sites)	No	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD			

- Alternative 5 – New Bridge on North Alignment (narrower width), with Realigned River Road, 2-staged construction

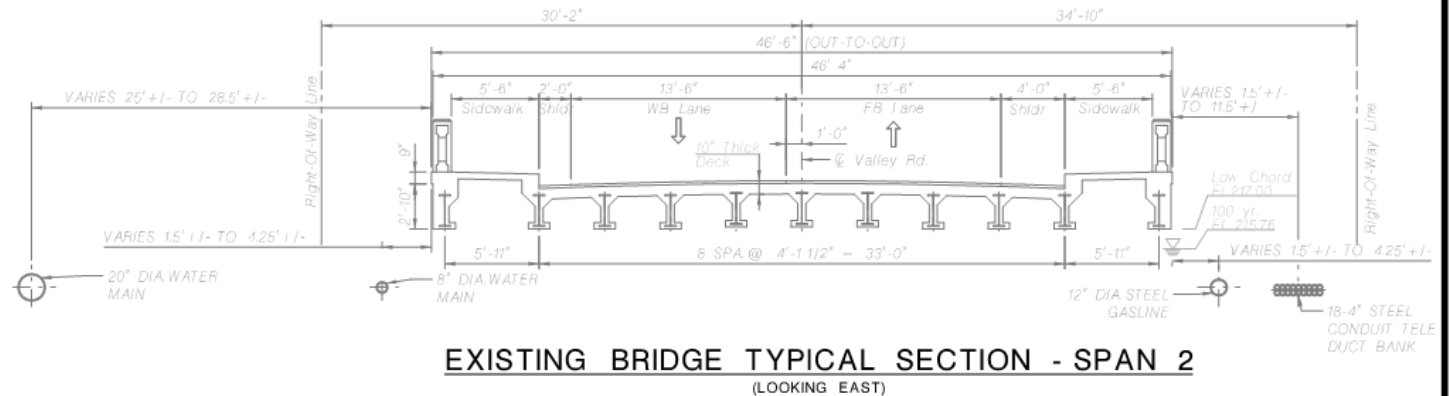


TYPICAL SECTION - STEEL ROLLED BEAM ALTERNATIVE
(LOOKING EAST)

PRELIMINARY PREFERRED ALTERNATIVE



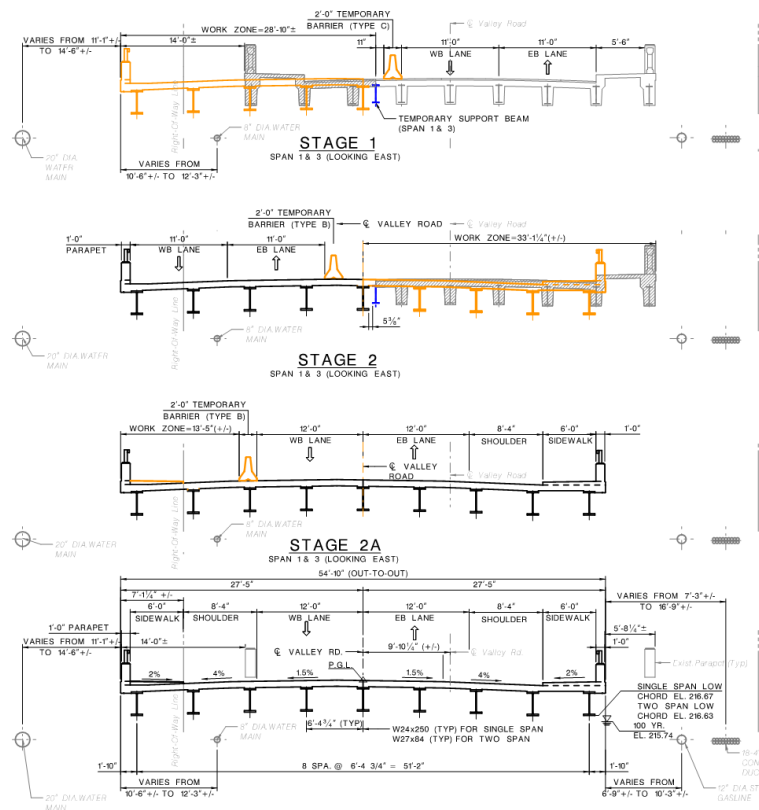
PPA - SHIFT ALIGNMENT NORTH MAINTAIN
ALL LANES, NO SIDEWALK DURING CONSTRUCTION



EXISTING BRIDGE

PRELIMINARY PREFERRED ALTERNATIVE

PPA- SHIFT ALIGNMENT NORTH, MAINTAIN ALL LANES



TYPICAL SECTION - STEEL ROLLED BEAM ALTERNATIVE
(LOOKING EAST)

SINGLE SPAN CONFIGURATION (83-0")

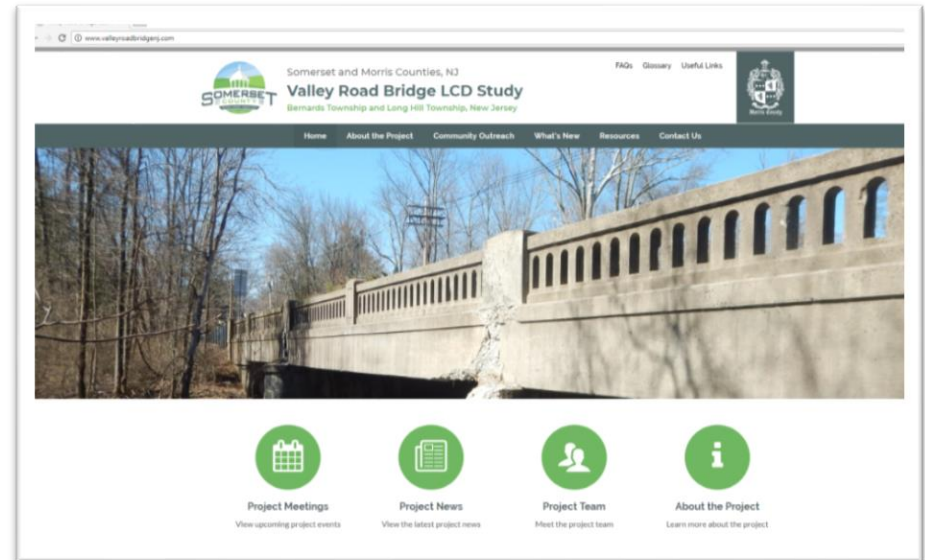
2-SPAN (45'-6" - 45'-6") CONFIGURATION

PROJECT SCHEDULE

- 18 month completion schedule
- **Major Milestones**
 - Purpose and Need Statement – July 2018
 - Development of Conceptual Alternatives – August/Sept. 2018
 - Selection of Preliminary Preferred Alternative – Jan 2019
 - Submission of Draft Local Concept Development Report – March 2019
 - Completion of Local Concept Development Phase – June 2019

PROJECT WEBSITE AND SOCIAL MEDIA

- PROJECT WEBSITE
 - <http://www.valleyroadbridgenj.com/>
- TWITTER
 - @ValleyRdBridge
 - <https://twitter.com/ValleyRdBridge>
- POWERPOINT PRESENTATION
 - will be posted on the project website



PROJECT CONTACT INFORMATION

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THANK YOU

For more information
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